1. Create following vectors

(a) $(1, 2, 3, \ldots, 19, 20)$

(b) $(20, 19, \ldots, 2, 1)$

(c) $(1, 2, 3, \ldots, 19, 20, 19, 18, \ldots, 2, 1)$

(d) $(4, 6, 3)$ and assign it to the name `tmp`.

For parts (e), (f) and (g) look at the help for the function `rep`.

(e) $(4, 6, 3, 4, 6, 3, \ldots, 4, 6, 3)$ where there are 10 occurrences of 4.

(f) $(4, 6, 3, 4, 6, 3, \ldots, 4, 6, 3, 4)$ where there are 11 occurrences of 4, 10 occurrences of 6 and 10 occurrences of 3.

(g) $(4, 4, \ldots, 4, 6, 6, \ldots, 6, 3, 3, \ldots, 3)$ where there are 10 occurrences of 4, 20 occurrences of 6 and 30 occurrences of 3.

2. Create the following vector. Hint: Paste function

```
("label 1", "label 2", ....., "label 30").
```

Note that there is a single space between `label` and the number following.

3. Run the following commands and generate 2 vectors xVec and yVec

   xVec = c(42,85,84,23,11,55,14,96,13,30)

   yVec = c(13,8,85,71, 1,7,55, 2,34,24)

   a. Subset xVec with values greater than 60
   b. Subset yVec with values less than mean of yVec
   c. How many odd numbers in xVec?
   d. Subset values in yVec which are between minimum and maximum values of xVec (yes, xVec)

4. Create the following matrix

$$A = \begin{bmatrix} 2 & 4 & 3 \\ 1 & 5 & 7 \end{bmatrix}$$

   a. Extract 1st and 3rd column
   b. Extract 1st row, 2nd column element
   c. Add rownames to the matrix (“row1”,”row2”)
   d. Add column names to the matrix (“col1”,”col2”,”col3”)
   e. Get average of row 1 elements using row name
   f. Extract elements in matrix A with values greater than or equal to 4